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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,887	05/13/2005	Stefan Bickert	49-003-TN	8690

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EXAMINER	
PERUNGAVOOR, SATHYANARAYA V	
ART UNIT	PAPER NUMBER
2624	
MAIL DATE	DELIVERY MODE
07/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,887	BICKERT ET AL.	
	Examiner	Art Unit	
	SATH V. PERUNGAVOOR	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/12/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant(s) Response to Official Action

[1] The response filed on May 4, 2009 has been entered and made of record.

Response to Arguments

[2] Presented arguments have been fully considered but are held unpersuasive. Examiner's response to the presented arguments follows below.

Claim Rejections - 35 USC § 101

Examiner withdraws the previously made rejection in view of claim amendments.

Claim Rejections - 35 USC § 103

Summary of Arguments:

Regarding claims 1, 2 and 14, applicant argues that:

1. The applied prior art does not disclose, "characteristic of the object is determined … from the values that are assigned to a partial image" [Remarks: page 9, para. 1; page 13, para. 1; page 14, para. 1].
2. There is no reasoning to combine Elabd and Yee. [Remarks: page 10, para. 2].

Regarding claims 6, applicant argues that:

1. The applied prior art does not disclose partial images being formed from partially read-out pixel rows. [Remarks: page 13, para. 3].

Examiner's Response:

Regarding claim 1, Examiner contends that:

1. The applied prior art does disclose, "characteristic of the object is determined … from the values that are assigned to a partial image". Elabd discloses processing partial images. See col. 7, ll. 35-40. But, Elabd does not disclose determining *a characteristic of the object*. However, Yee discloses determining *a characteristic of the object* from an image. See fig. 8; col. 6, ll. 44-55, where each camera image is used to determine eye movement in one direction independent of the other camera. Finally, Sasaki discloses the advantages of processing using partial images as opposed to whole images, such as small buffer size and real time processing. See col. 38, ll. 45-62. Therefore, it would have been obvious to one skilled in the art to determine a characteristic of the object from a partial image.
2. Sasaki discloses the advantages of processing using partial images as opposed to whole images, such as small buffer size and real time processing. See col. 38, ll. 45-62. This is the reasoning for combining Elabd and Yee.

Regarding claims 6, Examiner contends that:

1. Elabd does disclose partial images being formed from partially read-out pixel rows, because alternate rows of pixels are read-out, hence only partial of all rows is read-out. See col. 7, ll. 20-27.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[3] Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elabd [US 5,272,535] in view of Yee et al. ("Yee") [US 6,322,216 B1].

Regarding claim 1, Elabd discloses the following claim limitations:

> A method, implemented on an image-producing device including at least an image sensor and an evaluation unit, for detecting a characteristic of at least one object *[abstract]*, in which a. optical radiation influenced by the object *(i.e. illumination reflected by the scene being imaged)* is fed to an image sensor *[col. 3, ll. 49-51]*, b. at least two different partial images *(i.e. field 1, field 2…field N)* consisting of pixels are read out in succession from the image sensor *(i.e. 12)*, and values assigned to the pixels are fed to an evaluation unit *(i.e. 61) [fig. 4G]*, d. the partial images are combined to form a total image *(i.e. 24)* that is output for further processing *[fig. 4G; col. 7, ll. 30-48]*.

Elabd does not explicitly disclose the following claim limitations:

> c. the characteristic of the object is determined in each case from the values that are assigned to a partial image, and

However, in the same field of endeavor Yee discloses the deficient claim limitations, as follows:

> The characteristic of the object is determined *(i.e. movement of the eye)* in each case from the values that are assigned to an image *[fig. 8; col. 6, ll. 44-55]*.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Yee with Elabd and utilize partial images instead of whole images

the reasoning being to enable real time processing with a small buffer *[see US 7,116,358 B1 at col. 38, ll. 45-62]*.

Regarding claim 2, Elabd meets the claim limitations, as follows:

> The method as claimed in claim 1, wherein the determination of the characteristics from values of a partial image is performed simultaneously at least in part with the reading-out of a following partial image *[col. 8, ll. 49-68]*.

Regarding claim 3, Elabd meets the claim limitations, as follows:

> The method as claimed in claim 1, wherein the partial images do not overlap one another *(i.e. this inherent property of fields in interlace) [fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 4, Elabd meets the claim limitations, as follows:

> The method as claimed in claim 1, wherein the partial images are assembled from at least two incoherent pixel areas *(i.e. fields) [fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 5, Elabd meets the claim limitations, as follows:

> The method as claimed in claim 1, wherein the partial images are assembled in each case from a number of completely read-out pixel rows of the image sensor *[col. 3, ll. 54-65]*.

Regarding claim 6, Elabd meets the claim limitations, as follows:

The method as claimed in claim 1, wherein the partial images are assembled in each case from a number of only partially read-out pixel rows *(i.e. field)* of the image sensor *[fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 7, Elabd meets the claim limitations, as follows:

The method as claimed in claim 5, wherein the pixel rows of a partial image are spaced apart from one another in each case by a prescribed number of pixel rows that are not to be read out *(i.e. this an inherent property of fields, in even field the odd is not read) [fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 8, Elabd meets the claim limitations, as follows:

The method as claimed in claim 5, wherein the read-out sequence of a second partial image read out following on from a first partial image is offset from the first partial image by a pixel row *(i.e. this an inherent property of fields, a even field is one row offset from an odd field) [fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 9, Elabd meets the claim limitations, as follows:

The method as claimed in claim 1, wherein the partial images are read out in such a time that at least 10 total images per second can be output *[col. 7, ll. 49-54]*.

Regarding claim 10, Elabd meets the claim limitations, as follows:

The method as claimed in claim 1, wherein a partial image consists of only so many pixels that the reading-out of a partial image and the determination of the characteristic can be performed within 10 ms in each case *[col. 7, ll. 49-68]*.

Regarding claim 11, Yee meets the claim limitations, as follows:

The method as claimed in claim 1, wherein at least one parameter of the object from the group of position *(i.e. movement of the eye)*, dimension, shape, change in shape, speed of movement, color, brightness, optical reflection behavior of the object is determined as the characteristic *[fig. 8; col. 6, ll. 44-55]*.

Regarding claim 12, Yee meets the claim limitations, as follows:

The method as claimed in claim 1, wherein the characteristic *(i.e. movement)* is determined with the aid of a prescription of characteristics *(i.e. initial reference) [col. 10, ll. 49-53]*.

Regarding claim 13, Yee meets the claim limitations, as follows:

The method as claimed in claim 12, wherein the prescription of characteristics is derived from at least one already determined characteristic *(i.e. initial reference) [col. 10, ll. 49-53]*.

Regarding claim 14, Elabd meets the claim limitations, as follows:

The method as claimed in claim 1, wherein the read-out sequence of a partial image is controlled with the aid of a characteristic of the object determined from a

preceding partial image *(i.e. this an inherent property of fields, in even field the odd is not read) [fig. 4G; col. 7, ll. 30-48]*.

Regarding claim 15, Yee meets the claim limitations, as follows:

The method as claimed in claim 1, wherein an appliance *(i.e. laser)* is controlled with the aid of at least one value *(i.e. change in position)* obtained from the characteristic of the object *[col. 5, ll. 40-47]*.

Regarding claim 16, Yee meets the claim limitations, as follows:

The method as claimed in claim 15, wherein an appliance from the group of a laser appliance for operating on an eye *(i.e. laser)*, an aligning apparatus for positioning the image sensor relative to the position of the object, an optical irradiation apparatus, an apparatus for controlling an electrical parameter, a robot is controlled *[col. 5, ll. 40-47]*.

Regarding claim 17, Yee meets the claim limitations, as follows:

The method as claimed in claim 1, wherein an appliance parameter *(i.e. beam position)* is regulated in conjunction with at least one value *(i.e. eye position)* obtained from the characteristic of the object *[col. 5, ll. 40-47]*.

Regarding claim 18, Elabd meets the claim limitations, as follows:

The method as claimed in claim 1, wherein the variation in the characteristic of the object is displayed by a sequence of total images *[fig. 1A: display]*.

Regarding claim 19, Elabd discloses the following claim limitations:

> A method, implemented on an image-producing device including at least an image sensor and an evaluation unit, for detecting a characteristic of at least one object *[abstract]*, in which a. optical radiation influenced by the object *(i.e. illumination reflected by the scene being imaged)* is fed to an image sensor *[col. 3, ll. 49-51]*, such that a first partial image is recorded at a first instant *(i.e. field 1)*and at least a second partial image *(i.e. field 2)* is recorded at a second successive instant by the image sensor *[col. 7, ll. 63-66]*; b. the first partial image *(i.e. field 1)* and the second partial image *(i.e. field 2)* each consisting of pixels as recorded by the image sensor, are read out in succession from the image sensor *(i.e. 12)*, and values assigned to the pixels are fed to an evaluation unit *(i.e. 61) [fig. 4G]*, d. the first partial image and second partial image are combined either together or with additional partial images to form a total image *(i.e. 24)* that is output for further processing *[fig. 4G; col. 7, ll. 30-48]*.

Elabd does not explicitly disclose the following claim limitations:

> c. the characteristic of the object is determined in each case from the values that are assigned to the pixels of the first partial image and the second partial image, and

However, in the same field of endeavor Yee discloses the deficient claim limitations, as follows:

> The characteristic of the object is determined *(i.e. movement of the eye)* in each case from the values that are assigned to an image *[fig. 8; col. 6, ll. 44-55]*.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Yee with Elabd and utilize partial images instead of whole images

the reasoning being to enable real time processing with a small buffer *[see US 7,116,358 B1 at col. 38, ll. 45-62]*.

Regarding claim 20, all claimed limitations are set forth and rejected as per discussion for claim 19.

Conclusion

[4] THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

[5] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Matthew C. Bella whose telephone number is (571) 272-7778, can be reached on Monday to

Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: July 24, 2009

/Sath V. Perungavoor/

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